

Inspection Procedure for D412 stainless steel cross tube extrusion

D6020-160 B98110 PO#15494

SIDE "A"

1. Measure outside diameters (find highest & lowest) using a micrometer
2. Measure inside diameter using a vernier caliper
3. Measure wall thickness (find highest & lowest) using new Tube micrometer

SIDE "B"

1. Measure outside diameters (find highest & lowest) using a micrometer
2. Measure inside diameter using a vernier caliper
3. Measure wall thickness (find highest & lowest) using new Tube micrometer

CENTER

1. Measure center diameter using micrometer (find highest & lowest)
2. Using Dial indicator find straightness in the center
3. Using ULTRA-SONIC measure in x4 locations the wall thickness (try)

@ 12" intervals

Measure the straightness using the Dial Indicator

Record all dimensions and findings on the extrusion report sheets

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TUBE # AND SIDE	Total Length	OUTSIDE DIA HIGEST & LOWEST		INSIDE DIA HIGEST & LOWEST		WALL THICKNESS W/MIC HIGEST & LOWEST		CENTER OUTSIDE DIA HIGEST & LOWEST		STRIGHTNESS @ CENTER HIGEST & LOWEST
1 A	162.8"	3.283"	3.270"	2.400"	2.394"	0.348"	0.340"	3.284"	3.270"	0.016"
B	1/2 = 81.4"	3.286"	3.269"	2.401"	2.395"	0.348"	0.331"			
2 A	162.8"	3.286"	3.275"	2.409"	2.402"	0.350"	0.342"	3.285"	3.269"	0.006"
B	1/2 = 81.4"	3.285"	3.271"	2.426"	2.395"	0.352"	0.336"			
3 A	162.8"	3.286"	3.269"	2.410"	2.408"	0.358"	0.342"	3.286"	3.271"	0.0105"
B	1/2 = 81.4"	3.294"	3.286"	2.395"	2.393"	0.356"	0.345"			
4 A	162.8"	3.296"	3.275"	2.401"	2.396"	0.355"	0.347"	3.289"	3.274"	0.010"
B	1/2 = 81.4"	3.291"	3.276"	2.399"	2.391"	0.361"	0.331"			
5 A	162.8"	3.281"	3.276"	2.390"	2.386"	0.356"	0.341"	3.284"	3.273"	0.011"
B	1/2 = 81.4"	3.281"	3.266"	2.407"	2.395"	0.352"	0.331"			

STRIGHTNESS @ EVERY 12"

		12"	24"	36"	48"	60"	72"
TUBE # 1	A	0.012"	0.007"	0.010"	0.0105"	0.015"	0.014"
	B	0.0105"	0.009"	0.0085"	0.011"	0.018"	0.010"
TUBE #2	A	0.0095"	0.012"	0.010"	0.011"	0.016"	0.008"
	B	0.013"	0.015"	0.014"	0.008"	0.009"	0.009"
TUBE #3	A	0.006"	0.0105"	0.011"	0.006"	0.0095"	0.019"
	B	0.016"	0.0145"	0.016"	0.020"	0.012"	0.009"
TUBE #4	A	0.005"	0.006"	0.0145"	0.0065"	0.0075"	0.0115"
	B	0.006"	0.010"	0.011"	0.0075"	0.0105"	0.006"
TUBE #5	A	0.0085"	0.006"	0.0075"	0.011"	0.014"	0.0115"
	B	0.019"	0.012"	0.0135"	0.011"	0.0195"	0.009"

WALL THICKNESS @ CENTER

TUBE #	R1	R2	R3	R4
1				
2	UNABLE TO MEASURE DUE TO TOO			
3	HEAVEY OF SCALE			
4				
5				

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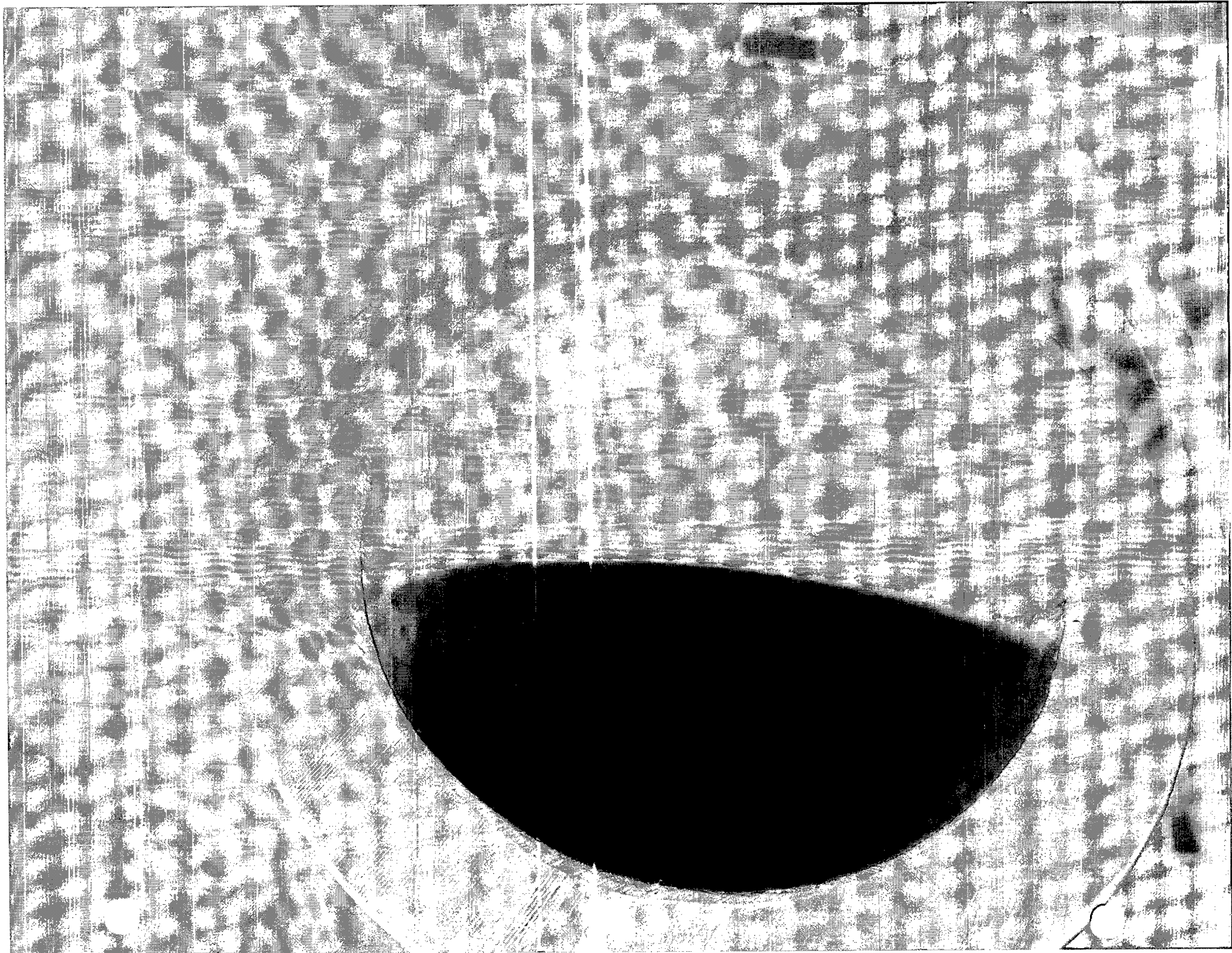
TUBE # AND SIDE	Total Length	OUTSIDE DIA HIGEST & LOWEST		INSIDE DIA HIGEST & LOWEST		WALL THICKNESS W/MIC HIGEST & LOWEST		CENTER OUTSIDE DIA HIGEST & LOWEST		STRIGHTNESS @ CENTER HIGEST & LOWEST
6 A	159.700"	3.300"	3.278"	2.401"	2.398"	0.448"	0.428"	3.305"	3.289"	0.013"
B	79.850"	3.305"	3.299"	2.401"	2.395"	0.468"	0.438"			
7 A	161.750"	3.299"	3.286"	2.406"	2.389"	0.448"	0.436"	3.311"	3.305"	0.009"
B	80.875"	3.306"	3.289"	2.401"	2.399"	0.451"	0.436"			
8 A	161.875"	3.301"	3.293"	2.402"	2.389"	0.449"	0.427"	3.304"	3.291"	0.0045"
B	80.9375"	3.291"	3.284"	2.406"	2.375"	0.442"	0.409"			
9 A	161.750"	3.309"	3.280"	2.412"	2.401"	0.444"	0.434"	3.281"	3.295"	0.014"
B	80.875"	3.307"	3.295"	2.421"	2.406"	0.439"	0.425"			
10 A	161.800"	3.402"	3.278"	2.396"	2.397"	0.451"	0.434"	3.296"	3.274"	0.0115"
B	80.900"	3.365"	3.251"	3.414"	2.400"	0.436"	0.411"			

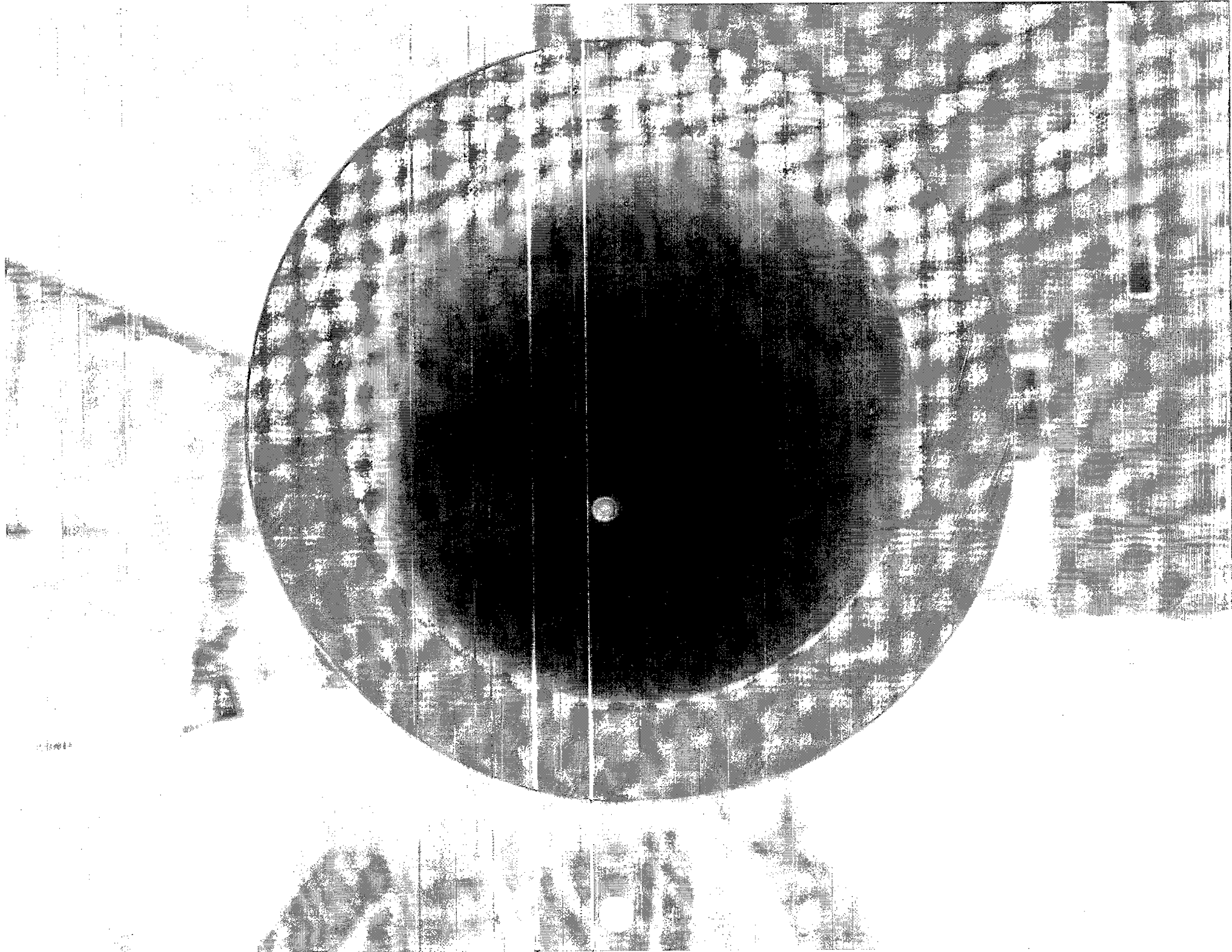
STRIGHTNESS @ EVERY 12"

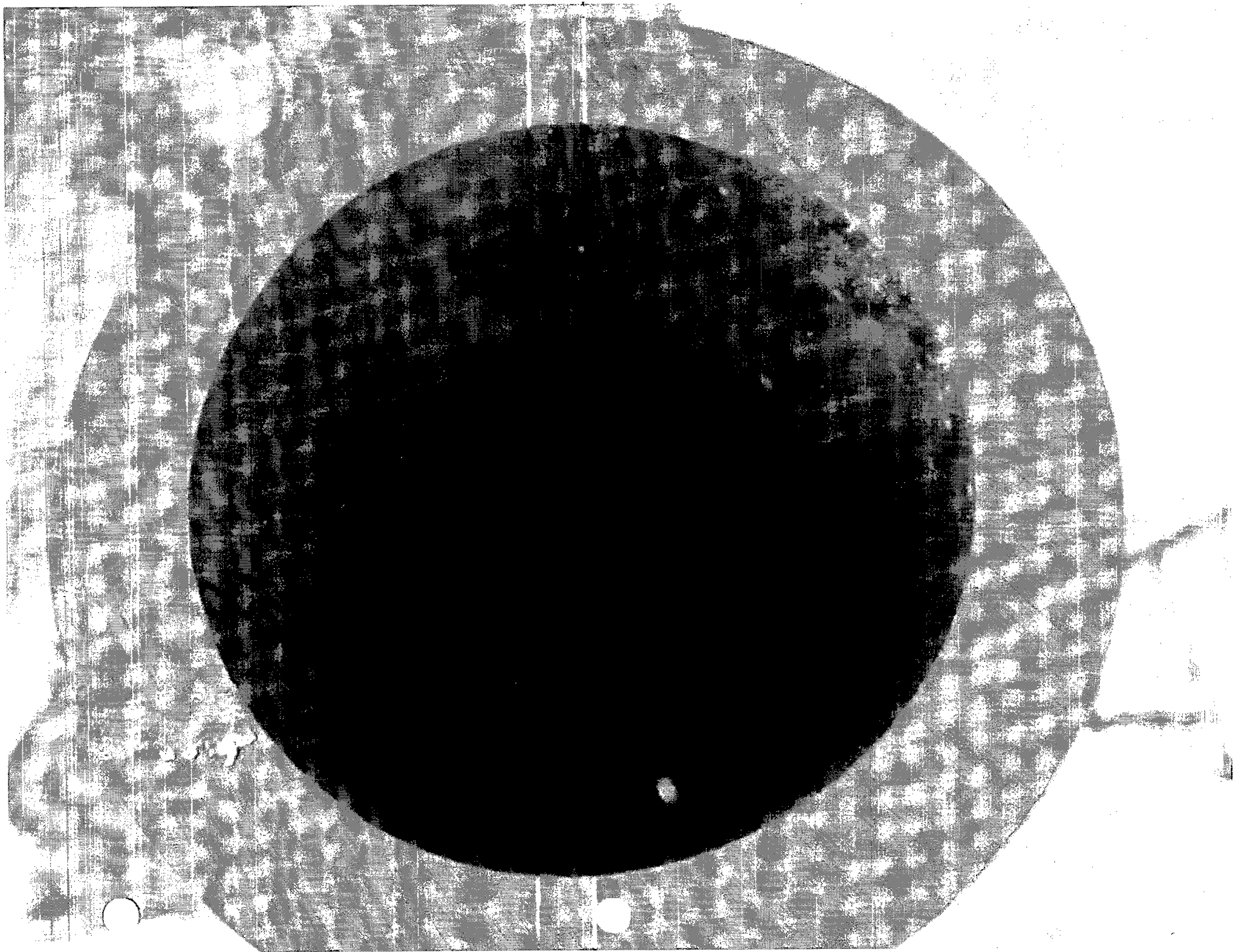
		12"	24"	36"	48"	60"	72"
TUBE # 6	A	0.011"	0.013"	0.0135"	0.0155"	0.015"	0.019"
	B	0.009"	0.0155"	0.011"	0.006"	0.0145"	0.014"
TUBE #7	A	0.012"	0.010"	0.0075"	0.0105"	0.012"	0.013"
	B	0.0095"	0.014"	0.0135"	0.0065"	0.013"	0.0095"
TUBE #8	A	0.0085"	0.0115"	0.016"	0.017"	0.0115"	0.014"
	B	0.011"	0.0135"	0.0145"	0.0155"	0.0125"	0.012"
TUBE #9	A	0.014"	0.016"	0.0165"	0.012"	0.014"	0.0075"
	B	0.0095"	0.0135"	0.010"	0.009"	0.010"	0.018"
TUBE #10	A	0.0095"	0.014"	0.0085"	0.0135"	0.006"	0.009"
	B	0.012"	0.0145"	0.008"	0.0105"	0.013"	0.0115"

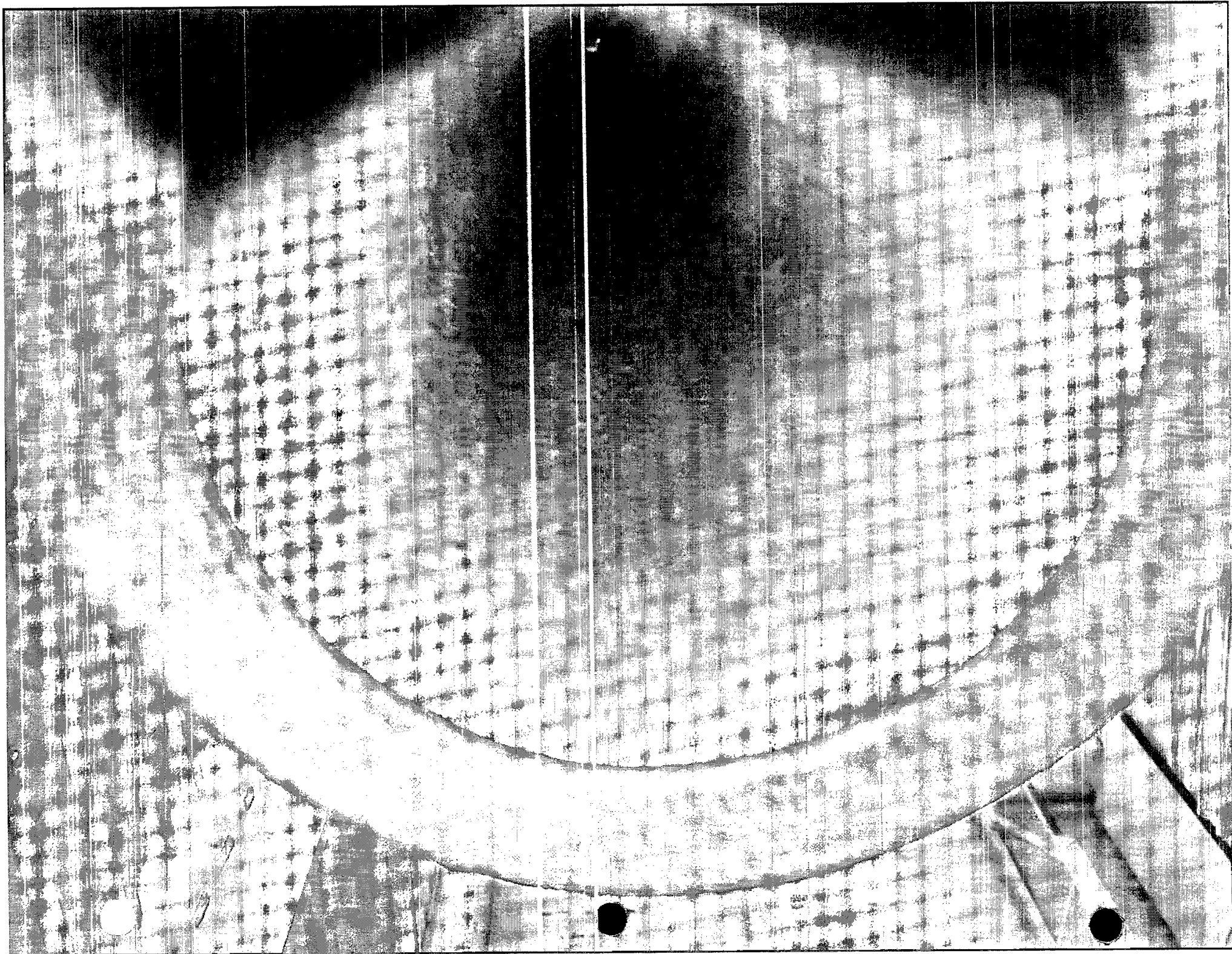
WALL THICKNESS @ CENTER

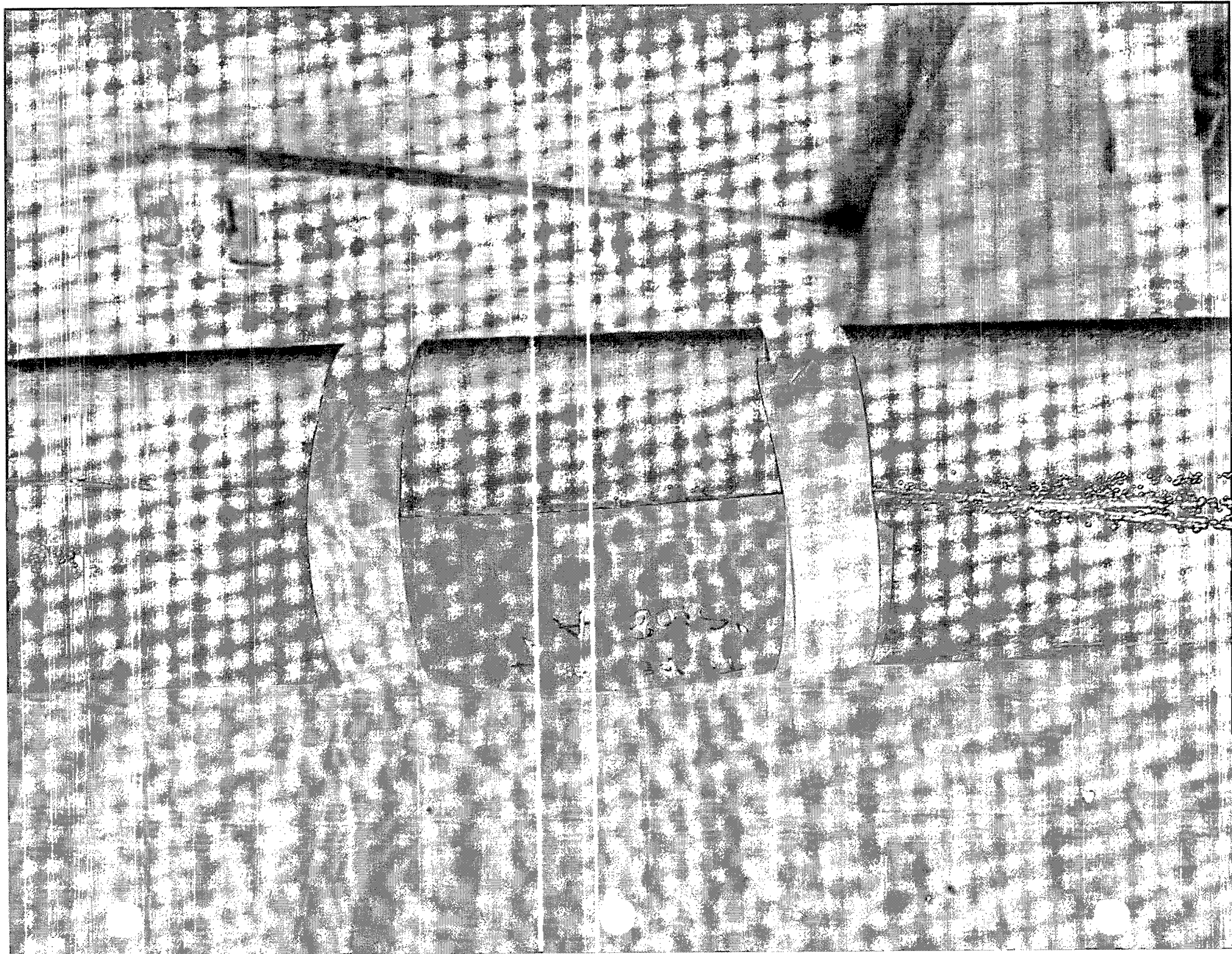
TUBE #	R1	R2	R3	R4
1				
2	UNABLE TO MEASURE DUE TO TOO			
3	HEAVEY OF SCALE			
4				
5				



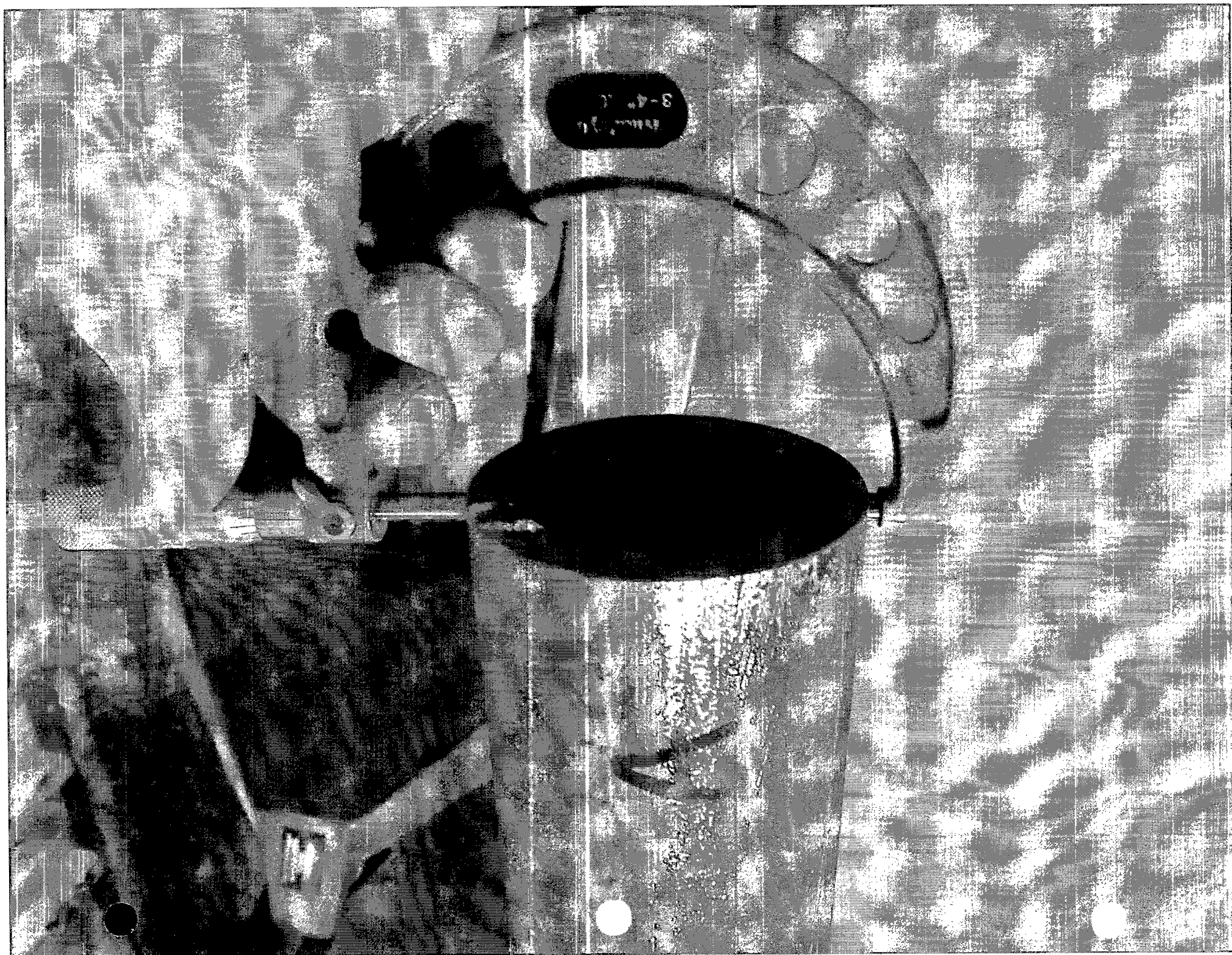


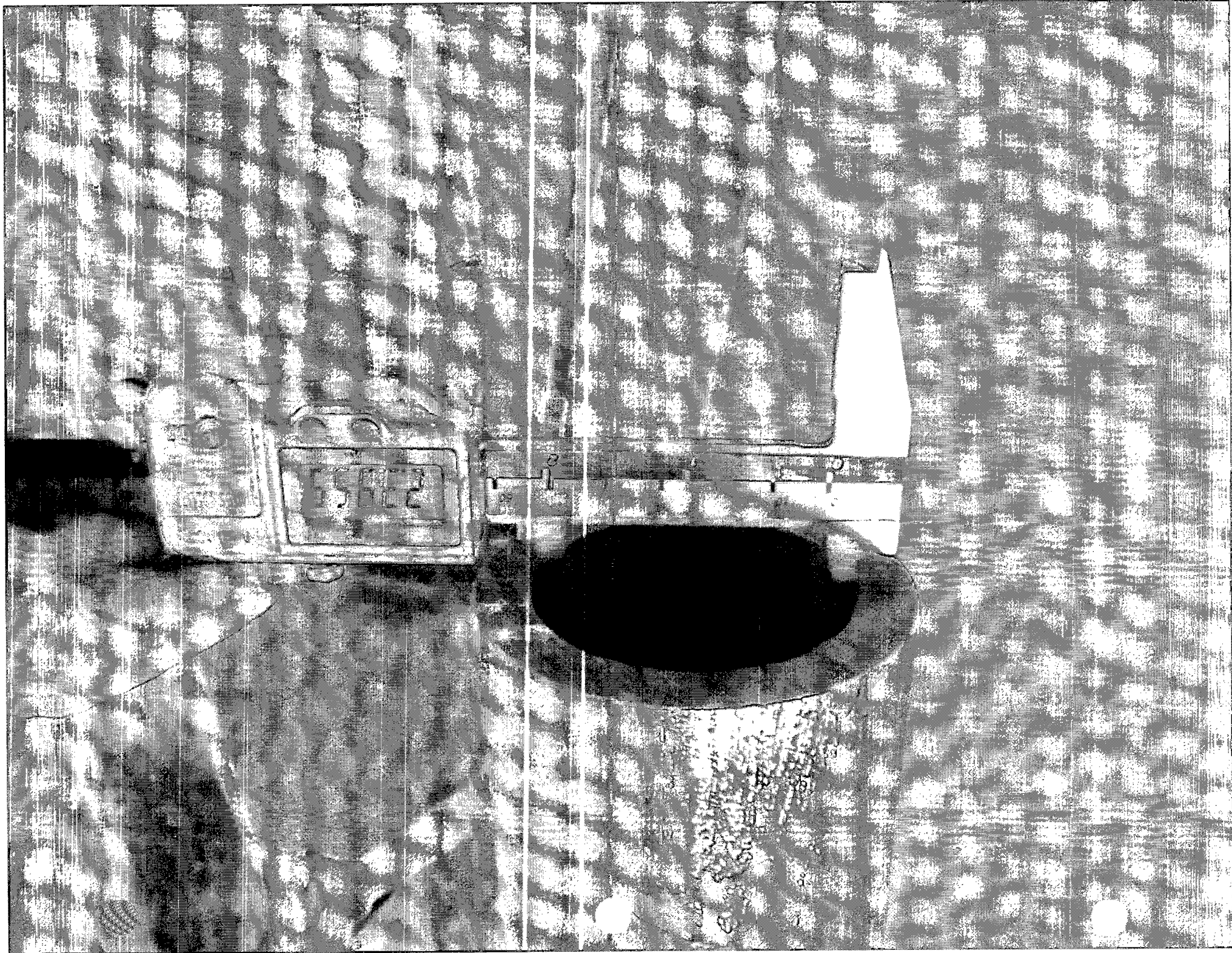














Linda Lacelle

From: Mark Podob <mpodob@metlabheattreat.com>
Sent: March-19-13 1:09 PM
To: Linda Lacelle
Cc: Dan Krackovic; Eugene Roberts
Subject: RE: latest cross tubes

We are inspecting them now, Linda.
Will know if we have the hardness shortly and then we can arrange for a truck.
Will let you know as soon as I find out –
Thanks.

Mark Podob
Vice President, Marketing and Sales
Metlab
1000 E. Mermaid Lane
Wyndmoor, PA 19038
215-233-2600 Ext. 232
(F) 215-233-5653
mpodob@metlabheattreat.com

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From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Tuesday, March 19, 2013 7:16 AM
To: Mark Podob
Cc: Dan Krackovic; Nigel Forbes; Chris Provencal; Mike Petsche
Subject: RE: latest cross tubes

Good Morning Mark,
Could you please let us know if these 5 tubes will be shipping out today? I may have to arrange to send another truck to ensure they arrive here on Friday.
Thx
Linda

From: Mark Podob [<mailto:mpodob@metlabheattreat.com>]
Sent: March-15-13 11:13 AM
To: Linda Lacelle
Cc: Dan Krackovic; Nigel Forbes; Chris Provencal; Mike Petsche
Subject: RE: latest cross tubes

Linda –
These are running now with an aim towards being in straightening on Monday.
We have a good chance of shipping to meet your schedule and we will keep you posted how we progress.
Thanks.

Mark Podob
Vice President, Marketing and Sales
Metlab
1000 E. Mermaid Lane
Wyndmoor, PA 19038
215-233-2600 Ext. 232

(F) 215-233-5653
mpodob@metlabheattreat.com

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From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Thursday, March 14, 2013 11:33 AM
To: Mark Podob
Cc: Dan Krackovic; Nigel Forbes; Chris Provencal; Mike Petsche
Subject: RE: latest cross tubes
Importance: High

Hi Mark,
We have a scheduled testing date of April 1st. is there any way we can get these back at our facility latest by March 22nd?
Please let me know at your earliest convenience.
Thx
Linda

From: Mark Podob [<mailto:mpodob@metlabheattreat.com>]
Sent: March-12-13 10:49 AM
To: Linda Lacelle
Cc: Dan Krackovic
Subject: RE: latest cross tubes

No, Linda – that is something that we can't do –
We could possibly get the ends, but I don't know how far down the blast would be effective.

Mark Podob
Vice President, Marketing and Sales
Metlab
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Wyndmoor, PA 19038
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From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Tuesday, March 12, 2013 10:42 AM
To: Mark Podob
Cc: Chris Provencal
Subject: RE: latest cross tubes

Thanks Mark!
Is there any way you can sandblast the inside of the tubes as well as the outside?
Thx
Linda

From: Mark Podob [<mailto:mpodob@metlabheattreat.com>]
Sent: March-12-13 9:54 AM

To: Linda Lacelle
Subject: RE: latest cross tubes

I'll get this scheduled as soon as they arrive, Linda.

Mark Podob
Vice President, Marketing and Sales
Metlab
1000 E. Mermaid Lane
Wyndmoor, PA 19038
215-233-2600 Ext. 232
(F) 215-233-5653
mpodob@metlabheattreat.com

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From: Linda Lacelle [<mailto:llacelle@dartaero.com>]
Sent: Tuesday, March 12, 2013 7:13 AM
To: Mark Podob
Subject: latest crosstubes

Hi Mark,
Please let me know the schedule for the 5 tubes we sent out on Friday. These are time sensitive, and eng is waiting to hear back from me as to the turn around.
Thx
Linda